Research article

Emotional state of patients with mild traumatic brain injury

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ABSTRACT

Introduction and Aim: Psychological effects of traumatic brain injury (TBI) are frequently present in addition to neurological deficits. The purpose of this study is to assess the emotional state of patients with mild TBI in the remote period.

Methods: This study included 78 patients aged 22–53 years with a reliably established diagnosis of mild TBI, with damage duration ranging from 1–5 years. The mean age was (34.6±3.2 years). To determine the level of anxiety, the Taylor Manifest Anxiety Scale was used.

Results: The testing revealed that patients with suicidal thoughts had a significantly higher level of anxiety (34.2%) than the patients with TBI in the main group (27.5%). Comparative analysis between the two groups showed that the uselessness was more characteristic for suicides (22.8±0.14), who considered themselves completely useless than patients with TBI (20.6±1.36) with reliability ($t = 4.2$; $p<0.001$).

Conclusion: Due to the damage that post-traumatic stress disorder (PTSD) can do to the body, especially to mental health, it is important to use medical and psychosocial rehabilitation as early as possible in the treatment stage to figure out the type and severity of the psychoemotional disorder and correct the psychosomatic state using psychopharmacological and psychotherapeutic effects.

Keywords: Traumatic brain injury; emotional state; anxiety; depression; psychotherapy; mixed anxiety-depressive disorder.

INTRODUCTION

Psychological effects of traumatic brain injury (TBI) are frequently present in addition to neurological deficits. These effects have a significant negative impact on social adaptation and lower the quality of life for patients who experience persistent personality changes with increased impulsivity (1). Moreover, depression is one of the most frequent residual complaints among trauma survivors (2). Depression after TBI is experienced by 16–60% of affected patients at various time points up to a year or longer (3). Anxiety disorders may be the most common comorbid condition in 31–61% of patients with depression after a TBI (4). Anxiety and mood disorders within the first year after injury occur in 60.8% of trauma patients (5).

During the coronavirus outbreak, many individuals also resided in isolation due to extended stress. During the quarantine, many began working from home, limiting communication (6–8). Both physical exercise and social engagement were severely restricted. Many had feelings of alienation and loss as a result of feeling alone and alienated. Many people have experienced apathy and despair as a result of limitations on their ordinary pleasures, irregular contact, and missed social gatherings with friends and family. Furthermore, the feeling of hopelessness and helplessness increased with the unpredictability of the future, the endless news of the sick and dead, and their concern for their own and their loved ones' health. It should be highlighted that throughout the pandemic, there was an obvious increase in the symptoms of depression and anxiety, which frequently contributed to a rise in suicide thoughts (9–11).

As early as three years following injury, most patients with moderate TBI exhibit psychosocial difficulties, a reduction in life satisfaction, and depressive symptoms (12). Affective symptoms, suicidal thoughts, and the onset or exacerbation of psychoemotional disorders, such as post-traumatic stress disorder (PTSD) and depression, are common symptoms of mild TBI (13). Additionally, moderately severe TBI is associated with high rates of depression and anxiety (14). The long-term effects of mild TBI are also reported by many studies describing neurologic symptoms, with the majority of autonomic and emotional-personal anomalies (15, 16). Suicidal thoughts include pessimism, depression, self-doubt, and hopelessness. The purpose of this study is to assess the emotional state of patients with mild TBI in the remote period.

MATERIALS AND METHODS

This study included 78 patients aged 22–53 years with a reliably established diagnosis of mild TBI, with

damage duration ranging from 1–5 years. The mean age was (34.6±3.2 years). Two groups have been established to study the results. The main group included 38 patients who had suffered during the riots, with minor craniocerebral injuries in the remote period and mixed anxiety-depressive disorder. The comparison group included 40 patients with depressive syndrome who committed suicidal acts without TBI and were of a similar age. To determine the level of anxiety, the Taylor Manifest Anxiety Scale was used (17).

Statistical analysis was done using Statistica v8.0 (StatSoft Inc., Tulsa, USA). The collected data are shown as mean±standard deviation. The Student's t test was used to evaluate parameter differences. At $p<0.05$, differences were considered statistically significant. The collected data were kept confidential, and the study was approved by the Bioethics Committee of Medical Rehabilitation Center Kyrgyz Research Institute of Balneology and Rehabilitation Treatment (Protocol No. 3, dated October 7, 2013).

RESULTS

A questionnaire survey was carried out with the objective of determining the emotional state of patients, and questions about stress exposure were essential. Following the study, it was found that 47.6% of those included experienced stress either daily or within a day or two. A majority of those surveyed (36.5%) indicate that they think that they experience stress one to three times each month. Only 7.2% of respondents said they were not stressed. 8.7% of those surveyed said it was difficult to answer. As seen in Fig. 1, a significant percentage of respondents (84.1%) experience the effects of stress.

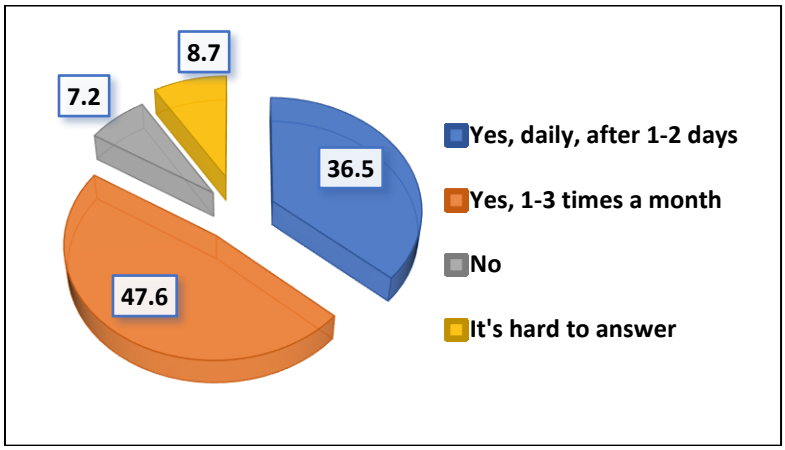

Fig. 1: The proportion of respondents who were exposed to stress

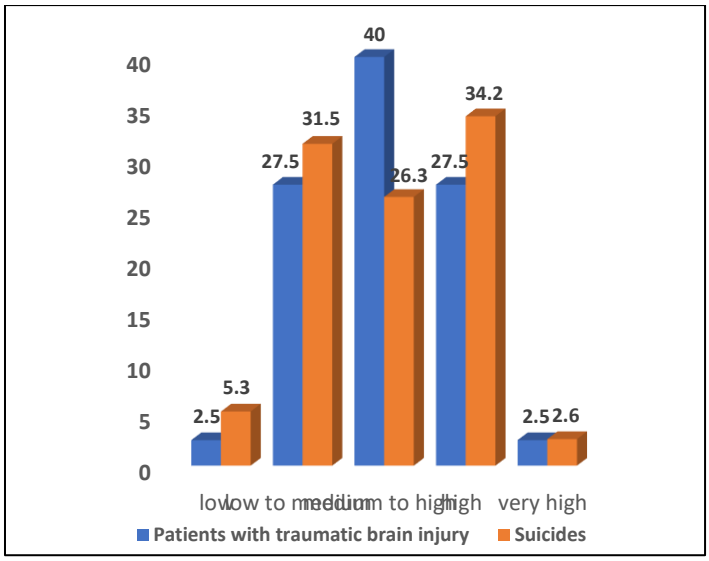

Fig. 2: Anxiety level between the main and compared groups

Comparing the characteristics of anxiety between these groups, reliable differences were revealed. The testing revealed that patients with suicidal thoughts had a significantly higher level of anxiety (34.2%) than the patients with TBI in the main group (27.5%). Whereas the average level with a tendency to be high is more frequent among patients with TBI in the main group (40.0%) than in suicides (26.3%). Unstable mood backgrounds and increased impressionability are more characteristic of suicides. At the psychological level, anxiety is felt as tension, concern, nervousness, a feeling of uncertainty, and impending failure (Fig. 2).

Comparative analysis between the two groups showed that the uselessness was more characteristic for suicides (22.8±0.14), who considered themselves completely useless than patients with TBI (20.6±1.36) with reliability (t = 4.2; p<0.01). Pessimistic mood, depressed mood, and discouragement of their own situation were typical for suicides. The data is presented in Table 1.

Table 1: Analysis of differences in groups

Variable	Patients with TBI (n=40)	Suicides (n=38)	P value
Uselessness	20.6±1.6	22.8±0.14*	P<0.01
Financial situation	23.6±0.18*	21.1±0.12	P<0.01
Nightmares	21.6±0.006*	20.9 ± 0.16	P<0.01

Data shown as mean ±standard deviation. *Significant p-value<0.01

Chronic stress in situations of long-term instability, social and financial insecurity, and future uncertainty can frequently lead to anxiety and depression. The absence of visible shifts to improve the living conditions of the majority of people, disappointment with current changes, deterioration of their financial situation, and fear for their future and the future of their relatives, as an effect of chronic stress, affect behavior and activity in general. Some people, left alone with their problems and in a state of hopelessness, commit suicide attempts. Others actively try to change the situation in conditions of economic and social instability, participating in various rallies and riots. At the same time, there is strong psychotraumatic stress: on the one hand, a clearly realized feeling of threat to life, injury, and pain, and on the other hand, psycho-emotional stress associated with the death in front of the eyes of people standing nearby. Patients with TBI during mass riots experiencing psychoemotional stress associated with death in front of people standing nearby had difficulties falling asleep and more often had nightmares (21.6±0.006) than suicides (20.9±0.16) with the differences being reliable (t = 3.3; p<0.01). At the same time, financial situation was more often concerned for patients with TBI (23.6±0.18) than suicides (21.1±0.12) with reliability (t = 3.2; p<0.01) (Table 1). The desire to escape from solving difficult life issues and the tendency to dramatize situations were more characteristic of suicides.

Positive correlations were obtained between the development of PTSD and a high level of anxiety (r = +0.42; p<0.001) and between moderate depression and irritability (r = +0.41; p<0.001).

DISCUSSION

Neuropsychiatric illnesses play a significant role in comorbidity among patients with severe TBI, and a number of neuropsychiatric symptoms have been identified (18). An increased intensity of symptoms and a noticeably higher prevalence of suicidal thoughts have been associated with the comorbidity of depression and anxiety disorders (19). Quality of life suffers when anxiety disorders coexist with depression. Comorbid depression and anxiety are frequent ailments, with 90% of individuals with anxiety disorders suffering comorbid depression (20). Depression and a higher risk of suicide behavior are also related to PTSD (21, 22). Risk factors for suicidal thoughts and planning include hopelessness, sadness, fear, an inability to cope with the symptoms of mental health disorders, and the consumption of alcohol (23).

These findings are consistent with a number of studies in which individual depressive symptoms were considered an indicator of suicide conduct. Hopelessness is identified as a major suicidogenic component of depression. Suicidal intentions are more strongly correlated with hopelessness than depression (24). Individuals with depression assume that suicide is the only solution accessible to them as they experience hopelessness. Even many years after death, loved ones may still be in distress, which can result in unfavorable events (25). While under emotional stress, bereaved suicide survivors are more susceptible to mental health issues (26).

The emotional anomalies and psychological problems related to TBI require psychological correction and psychotherapy. Restorative psychotherapy assists patients in dealing with feelings of guilt, regaining control over their surroundings, and coping with states of helplessness and powerlessness.

Undoubtedly, one of the most significant difficulties facing the healthcare system is how to treat and medically rehabilitate those who have suffered from TBI. Medical rehabilitation that is carried out in stages promotes rapid adaptation, functioning capacity restoration, and health improvement.

CONCLUSION

Due to the damage that PTSD can do to the body, especially to mental health, it is important to use medical and psychosocial rehabilitation as early as possible in the treatment stage to figure out the type and severity of the psychoemotional disorder and correct the psychosomatic state using psychopharmacological and psychotherapeutic effects.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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